



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,250	08/23/2001	Satoshi Suzuki	1232-4758	1302
27123	7590	09/09/2005	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			MISLEH, JUSTIN P	
			ART UNIT	PAPER NUMBER
			2612	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/938,250	SUZUKI, SATOSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Justin P. Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 June 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 2 and 4 - 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 2 and 4 - 9 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to Claim 2 have been considered but are moot in view of the new grounds of rejection. Additionally, in regards to Applicant's amendments, there are no further objections to the specification and drawings.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 2 and 4 – 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Egawa et al. in view of Goff in further view of Lowles et al.

4. For **Claim 2**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, an image sensing apparatus and a corresponding method of operating thereof (see figures 1 – 3, 8, and 19) comprising (the steps thereof):

a signal generator adapted to generate a signal upon reception of input light (1012 – see figure 18);

a transfer unit adapted to transfer the signal generated by said signal generator (1018 – see figure 18);

an amplification unit adapted to amplify the signal transferred from said transfer unit (1201 – see figure 18); and

a control unit (1106 – see figure 18).

However, Egawa et al. do not disclose a temperature measuring unit adapted to measure a temperature and wherein the control unit is adapted to decrease a gain when a temperature measured by said temperature measuring unit is higher than a predetermined temperature and increase the gain when the temperature measured by said temperature measuring unit is lower than the predetermined temperature.

On the other hand, Goff also discloses an amplification unit and a control unit. Furthermore, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to decrease a gain when a temperature measured by the temperature measuring unit is higher than a predetermined temperature and increase the gain when the temperature measured by said temperature measuring unit is lower than the predetermined temperature (see column 4, lines 13 – 16). For instance, turning to figure 3 and column 4 (lines 5 – 12), Goff shows and correspondingly states that the gain is increased by at least -9.0 db (negative) as the temperature increases such that the total gain change as the temperature increases is -4.5 db (negative) or in other words a decrease in gain.

As stated in columns 1 (lines 15 – 18) and 2 (lines 49 – 56) of Goff, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included a temperature measuring unit and a control unit adapted to change a gain of said amplification unit in accordance with a measurement in said temperature measuring unit, as

Art Unit: 2612

taught by Goff, in the apparatus including and an amplification unit and a control unit, disclosed by Egawa et al., for the advantage of maintaining consistent electrical characteristics in changing ambient temperatures.

However, while Goff teach a temperature measuring unit and a corresponding predetermined temperature, Goff does not teach wherein said predetermined temperature is set such that dark current does not exceed a predetermined value.

In analogous art, Lowles et al. also provides an image sensing apparatus including a signal generator and an amplification unit. More specifically, Lowles et al. teach, as shown in figure 2 and Table 1 and as stated in column 4 (line 48) – column 6 (lines 46), an image sensing apparatus including a signal generator (CCD) and an amplification unit (Analog Signal Processor) wherein a predetermined temperature (“stability of the CCD’s temperature”) is set such that dark current does not exceed a predetermined value (“allowable variation in the dark current”). Turning to equation 1 and column 5 (lines 49 – 60), Goff teaches that the dark current is calculated according to a predetermined allowable variation such that the predetermined stability temperature of the CCD is set in accordance with calculated dark current.

As stated in column 1 (lines 25 - 30) of Lowles et al., at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included setting the predetermined temperature such that dark current does not exceed a predetermined value, as taught by Lowles et al., in the image sensing apparatus including temperature measuring unit, taught by Egawa in view of Goff, for the advantage taking into account unexpected variations or conditions in the environment of unexpected changes in the operating characteristics of the image sensing apparatus.

5. As for **Claim 4**, Egawa et al. disclose, as shown in figures 3, 13, 18, 20, and 29 and stated in column 20 (line 41) – column 21 (line 15), wherein the apparatus further comprises a calculation unit adapted to calculate a correlation between at least two signals amplified by said amplification unit (1201L and 1201R).

6. As for **Claim 5**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, wherein said signal generator (1012 – see figure 18) comprises a plurality of light-receiving units (113 and 114 – see figure 29), formed on different semiconductor substrates, adapted to receive object images and generates said at least two signals.

7. As for **Claim 6**, Egawa et al. disclose, as shown in figures 1 – 3, 8, 9, 13, 18 – 20, and 29, wherein said transfer unit comprises at least two transfer units (113 and 114 – see figure 29), and while said amplification unit amplifies a signal transferred from one transfer unit, said amplification unit does not amplify a signal transferred from the other transfer unit (The signals from transfer units 113 and 114 are correlated with each other during light projection ON and OFF states; thereby, alternating the readout from the transfer units).

8. As for **Claim 7**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, further comprising a light projection unit (1101 – see figure 18) adapted to project light to an object (1121 – see figure 18), and said signal generator (1012 – see figure 18) receives light reflected by the object and generates a signal upon ON/OFF operation of said light projection unit (Steps S2002 and S2006 – figure 19).

9. As for **Claim 8**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, further comprising a skim unit (117 and 118 – see figure 29) adapted to remove a predetermined amount of charge from a charge transferred from said transfer unit (113 and 114 – see figure 29).

Art Unit: 2612

10. As for **Claim 9**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, wherein said transfer unit (1018 – see figure 18) comprises a charge transfer unit at least part of which is coupled in a ring shape (113 and 114 – see figure 29).

*Cited Prior Art*

11. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure for the reason that each (Hieda and Arai et al.) compensating an image sensing apparatus for variations in ambient and operating temperatures such that dark current is reduced.

*Conclusion*

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2612

13. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Thai Q Tran can be reached on 571.272.7382. The fax phone number for the organization where this application or proceeding is assigned is 571.273.3000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*JPM*

*August 25, 2005*



A handwritten signature of "THAI TRAN" is written diagonally across the bottom of the page. To the right of the signature, the words "PRIMARY EXAMINER" are printed vertically.